Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A computer-implemented method for displaying information on one or more user interfaces regarding the likelihood a person has a gene variant indicative of an atypical event, comprising the steps of:

displaying a first user interface to a clinician, the user interface configured to display and receive clinical agent information including at least one identifier of a clinical agent;

receiving from the user interface the clinician's inputs including at least one identifier of a clinical agent and a dosage of the clinical agent, wherein receiving includes receiving a selection of an entry in a listing of clinical agents on the first user interface and a selection of the dosage from a range of dosages recommended for the clinical agent associated with the selected entry;

accessing a data structure to determine if a gene variant is known to be associated with one or more atypical events for the identifier of the clinical agent received from the clinician, wherein the data structure includes an agent-gene association table;

inquiring if the person to whom the clinical agent is to be administered has a stored genetic test result value for the gene variant, wherein inquiring includes accessing an electronic medical record (EMR) of the person;

accessing hereditary information for the person if the person does not have a genetic test result value for the genetic variant, the hereditary information being information that may be utilized to determine if the person has a predisposition for certain conditions, wherein the hereditary information is obtained from the EMR of the person;

utilizing the hereditary information for the person to determine the likelihood the person has the gene variant;

generating an output including information regarding the likelihood that the person has the gene variant indicative of an atypical event based on the hereditary information; ~~and~~

displaying a second user interface to the clinician, the user interface configured to display the output regarding the likelihood the person has the gene variant indicative of an atypical event for the identifier of the clinical agent received from the clinician;

determining a first risk of damage to the person, the first risk of damage being associated with administering to the person the dosage of the clinical agent as indicated by the clinician;

determining a second risk of damage to the person, the second risk of damage being associated with the damage caused to the person by not administering the dosage of the clinical agent;

utilizing the first risk of damage and second risk of damage determinations to generate an output including an automated clinical response containing suggestions for clinical actions to be taken by the clinician, and

displaying a third user interface to the clinician, the user interface configured to display the output regarding the generated automated clinical response.

2. (Canceled).

3. (Previously Presented) The method of claim 1, wherein the hereditary information includes ethnicity, gender or geographic origin.

4. (Canceled)

5. (Previously Presented) The method of claim 1, wherein the accessing of the hereditary information comprises accessing the hereditary information from an electronic medical record of the person stored within a comprehensive healthcare system.

6. (Previously Presented) The method of claim 1, further comprising the step of initiating one or more clinical actions if a test result value is not available for the person and the information regarding the risks indicates a significant risk that the person has the gene variant associated with an atypical event.

7. (Previously Presented) The method of claim 6, wherein the one or more clinical actions comprise at least one of ordering a genetic test, and displaying a third user interface configured to display a notification to the clinician that the agent should be suspended in view of the risk of an atypical event, canceling the order for the clinical agent absent input from the clinician to the contrary, and recommending an alternative clinical agent.

8. (Currently Amended) A computer system embodied on one or more computer storage media having computer-executable instructions embodied thereon for displaying information on one or more user interfaces regarding the likelihood that the person has the gene variant indicative of an atypical event based on the hereditary information, comprising:

a first displaying component that displays a first user interface to a clinician, the user interface configured to display and receive clinical agent information including at least one identifier of a clinical agent;

a receiving component that receives from the user interface the clinician's inputs including at least one identifier of a clinical agent and a dosage of the clinical agent, wherein receiving includes receiving a selection of an entry in a listing of clinical agents on the first user interface and a selection of the dosage from a range of dosages recommended for the clinical agent associated with the selected entry;

a first accessing component for accessing a data structure to determine if a gene variant is known to be associated with one or more atypical events for the identifier of the clinical agent received from the clinician, wherein the data structure includes an agent-gene association table;

an inquiring component that inquires if the person to whom the clinical agent is to be administered has a stored genetic test result value for the gene variant, wherein inquiring includes accessing an electronic medical record (EMR) of the person;

a second accessing component for accessing hereditary information for the person if the person does not have a genetic test result value for the gene variant, the hereditary information being information that may be utilized to determine if the person has a predisposition for certain conditions, wherein the hereditary information is obtained from the EMR of the person;

a utilizing component for utilizing the hereditary information for the person to determine the likelihood the person has the gene variant;

a first generating component that generates an output including information regarding the likelihood that the person has the gene variant indicative of an atypical event based on the hereditary information; ~~and~~

a second displaying component for displaying a second user interface to the clinician, the user interface configured to display the output regarding the likelihood the person has the gene variant indicative of an atypical event for the identifier of the clinical agent received from the clinician

a determining component for determining a first risk of damage to the person, the first risk of damage being associated with administering to the person the dosage of the clinical agent as indicated by the clinician and for determining a second risk of damage to the person, the second risk of damage being associated with the damage caused to the person by not administering the dosage of the clinical agent;

a second generating component that generates and output utilizing the first risk of damage and second risk of damage determinations to generate an

automated clinical response containing suggestions for clinical actions to be taken by the clinician, and

a third displaying component for displaying a third user interface to the clinician, the user interface configured to display the output regarding the generated automated clinical response.

9. (Canceled)

10. (Previously Presented) The computer system of claim 8, wherein the hereditary information includes ethnicity, gender or geographic origin.

11. (Canceled)

12. (Previously Presented) The computer system of claim 8, wherein the second accessing component accesses the hereditary information from an electronic medical record of the person stored within a comprehensive healthcare system.

13. (Previously Presented) The computer system of claim 8, further comprising an initiating component that initiates one or more clinical actions if a test result value is not available for the person and the information regarding the risks indicates a significant risk that the person has the gene variant associated with an atypical event.

14. (Previously Presented) The computer system of claim 13, wherein the one or more clinical actions comprise at least one of ordering a genetic test and displaying a third user interface configured to display a notification to the clinician that the agent should be suspended in view of the risk of an atypical event, canceling the order for the clinical agent absent input from the clinician to the contrary, and recommending an alternative clinical agent.

15. (Currently Amended) A computer storage medium containing instructions for a method for controlling a computer system for displaying information on one or more user interfaces regarding the likelihood that the person has the gene variant indicative of an atypical event based on the hereditary information, the method comprising the steps of:

displaying a first user interface to a clinician, the user interface configured to display and receive clinical agent information including at least one identifier of a clinical agent;

receiving from the user interface the clinician's inputs including at least one identifier of a clinical agent and a dosage of the clinical agent, wherein receiving includes receiving a selection of an entry in a listing of clinical agents on the first user interface and a selection of the dosage from a range of dosages recommended for the clinical agent associated with the selected entry;

accessing a data structure to determine if a gene variant is known to be associated with one or more atypical events for the identifier of the clinical agent received from the clinician, wherein the data structure includes an agent-gene association table;

inquiring if the person to whom the clinical agent is to be administered has a stored genetic test result value for the gene variant, wherein inquiring includes accessing an electronic medical record (EMR) of the person;

accessing hereditary information for the person if the person does not have a genetic test result value for the genetic variant, the hereditary information being information that may be utilized to determine if the person has a predisposition for certain conditions;

utilizing the hereditary information for the person to determine the likelihood the person has the gene variant;

generating an output including information regarding the likelihood that the person has the gene variant indicative of an atypical event based on the hereditary information; ~~and~~

displaying a second user interface to the clinician, the user interface configured to display the output regarding the likelihood the person has the gene variant indicative of an atypical event for the identifier of the clinical agent received from the clinician;

determining a first risk of damage to the person, the first risk of damage being associated with administering to the person the dosage of the clinical agent as indicated by the clinician;

determining a second risk of damage to the person, the second risk of damage being associated with the damage caused to the person by not administering the dosage of the clinical agent;

utilizing the first risk of damage and second risk of damage determinations to generate an output including an automated clinical response containing suggestions for clinical actions to be taken by the clinician, and

displaying a third user interface to the clinician, the user interface configured to display the output regarding the generated automated clinical response.

16. (Canceled)

17. (Previously Presented) The computer storage medium of claim 15, wherein the hereditary information includes ethnicity, whether the person's parents had the gene variant, gender and geographic origin.

18. (Canceled)

19. (Previously Presented) The computer storage medium of claim 15, wherein the accessing of the hereditary information comprises accessing the hereditary information from an electronic medical record of the person stored within a comprehensive healthcare system.

20. (Previously Presented) The computer storage medium of claim 15, further comprising the step of initiating one or more clinical actions. if a test result value is not available for the person and the information regarding the risks indicates a significant risk that the person has the gene variant associated with an atypical event.

21. (Previously Presented) The computer storage medium of claim 20, wherein the one or more clinical actions comprise at least one of ordering a genetic test and displaying a third user interface configured to display a notification to the clinician that the agent should be suspended in view of the risk of an atypical event, canceling the order for the clinical agent absent input from the clinician to the contrary, and recommending an alternative clinical agent.

22. (Previously Presented) The method of claim 1, wherein the hereditary information comprises one of the genetic characteristics of the person's family members or other relevant family history, demographic information for the person or combinations thereof, wherein the demographic information is indicative of genetic predisposition to certain conditions.

23. (Previously Presented) The method of claim 1, further comprising: storing the output including information regarding the likelihood that the person has a gene variant indicative of an atypical event based on the hereditary information in the patient's electronic medical record.